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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,277	02/02/2004	Nancy C. Stoffel	690-011192-US (PAR) / DA1	2223
7590 02/14/2007			EXAMINER MCNALLY, DANIEL	
Geza C. Ziegler, Jr. Perman & Green, LLP 425 Post Road Floor 2 Fairfield, CT 06824			ART UNIT 1733	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	02/14/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/770,277

Applicant(s)

STOFFEL ET AL.

Examiner

Daniel McNally

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 12/12/2006.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1, line 7 recites the step of "polishing said semi-solid adhesive layer," which is not recited as a method step in the specification. The applicant describes polishing a cured photopatternable layer such as polyarylene ether precursor polymer layer or a polyimide precursor layer, when discussing the prior art embodiment, page 6 of the specification. However the applicant does not disclose polishing as a method step in the improved embodiment of the present invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 8 has been amended to include the phrase, "fluidic ink." It is unclear if the patterned adhesive is made of fluidic ink. For the purpose of examination it is assumed the phrase was inserted into an incorrect position. It is recommended the applicant amend claim 1 by removing "fluidic ink," moving the phrase to line 7 to recite – developing fluidic ink passageways,-- or rewording line 8 to recite –a patterned adhesive epoxy layer, which define fluidic ink passageways.--

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Lin et al. [TW 506908 B] (newly cited).

It is noted the Examiner used United States Patent 6592210 (cited herein) as an English translation of TW 056908 B for the purposes of examination.

The admitted prior art as disclosed in pages 2-6 of the specification discloses a method of making a thermal printhead. The admitted prior art discloses coating a curable photosensitive layer onto a heater wafer, curing the layer, photopatterning the layer, polishing the layer and adding an adhesive to the layer to bond the heater wafer to a ink inlet wafer to form a thermal ink jet printhead. The admitted prior art discloses using a photosensitive polymer, such as polyimide, and an epoxy layer to form an adhesive bond. The admitted prior art does not disclose using a single epoxy layer as recited in claim 1.

Lin discloses a method of making a piezoelectric printhead. Lin admits that thermal printheads and piezoelectric printhead are different classifications of operating mechanisms of a conventional ink-jet printer (column 1, lines 20-32). However, Lin is considered analogous art because one would appreciate that the method of forming a piezoelectric printhead could also be used to form a thermal printhead. Furthermore, page 4 of specification of the immediate application recites, "a novel process for forming fluidic ink passageways in actuator wafers, such as those used for thermal ink jet or piezoelectric ink jet printheads." Lin teaches a method of forming a patterned thick film layer, which defines fluidic ink passageways. The method comprises a coating process, a hardening process and a photoexposure/development process. Lin discloses the material of the thick film layer as light sensitive polyimide or light sensitive epoxy (column 4, lines 35-65).

The admitted prior art discloses coating a photosensitive layer, such as polyimide precursor, onto a heater wafer and bonding an ink inlet wafer to the polyimide layer using an epoxy adhesive. Lin teaches light sensitive polyimide and light sensitive epoxy are functional alternatives used to bond two substrates forming a print head together. Therefore because the materials are alternatives it would have been obvious to one of ordinary skill in the art at the time of invention to use either one of a polyimide or epoxy photosensitive layer. It is well settled that where, as here, two equivalents are interchangeable for their desired function, an express suggestion of the desirability of the substitution of one for the other is not needed to render such substitution obvious. *In re Fout*, 675 F. 2d 297, 213 USPQ 532. See MPEP 2144.06

With regard to claims 2 and 3, the admitted prior art on page 2 of the specification discloses manufacturing a plurality of printheads concurrently, wherein a substrate with plurality of heating elements or "multiple die sites", each having individual electrodes as recited in claim 2, is bonded to another substrate and the bonded assembly is diced or "singulated" into separate printheads or "microfluidic devices" as recited in claim 3.

Response to Arguments

8. Applicant's arguments, see pages 3-7, filed 12/12/2006, with respect to the rejection(s) of claim(s) 1-3 under 35 U.S.C. 102(e) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the admitted prior art and Lin et al (newly cited).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel McNally whose telephone number is (571) 272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Daniel McNally
Examiner
Art Unit 1733


JEFF M. AFTERGUT
PRIMARY EXAMINER
GROUP 1300

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dpm

February 7, 2007